

# **CAREER GUIDE FOR EPIDEMIOLOGISTS**

Standard Occupational Code: 19-1041

Pay Band(s): 4, 5 ([Salary Structure](#))

## **Standard Occupational Description:**

Investigate and describe the determinants and distribution of disease, disability, and other health outcomes and develop the means for prevention and control.

**Epidemiologists in the Commonwealth are assigned to the following Roles in the [Program Administration Career Group](#):**

[Program Administration Specialist I](#)

[Program Administration Specialist II](#)

While Epidemiology jobs are primarily located in the Program Administration Career Group, individuals may want to pursue related opportunities or managerial jobs within the Commonwealth depending upon individual training, education, and interests.

Other Career Group(s) that may be of interest are:

[General Administration](#)

[Life and Physical Sciences](#)

[Policy Analysis and Planning](#)

[Physician Services](#) (Requires additional education and training)

## **SKILLS, KNOWLEDGE, ABILITIES AND TASKS**

(Technical and Functional Expertise)

### **Skills**

**Note:** The technical and functional skills listed below are based on general occupational qualifications for Epidemiologists commonly recognized by most employers. Typically, you will not be required to have all of the skills listed to be a successful performer. Recruitment and selection standards for an individual state job must be based on the specific knowledge, skills, and abilities for that job as indicated in the job announcement and job description in the Employee Work Profile.

1. Understanding the implications of new information for both current and future problem solving and decision-making.
2. Using scientific rules and methods to solve problems.
3. Teaching others how to do something.
4. Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
5. Understanding written sentences and paragraphs in work related documents.
6. Talking to others to convey information effectively.
7. Communicating effectively in writing as appropriate for the needs of the audience.
8. Using mathematics to solve problems.

9. Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
10. Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

## **Knowledge**

**Note:** The technical and functional knowledge statements listed below are based on general occupational qualifications for Epidemiologists commonly recognized by most employers. Typically, you will not be required to have all of the knowledge listed to be a successful performer. Recruitment and selection standards for an individual state job must be based on the specific knowledge, skills, and abilities for that job as indicated in the job announcement and job description in the Employee Work Profile.

### **The Knowledge of:**

1. Arithmetic, algebra, geometry, calculus, statistics, and their applications.
2. The chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.
3. Plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.
4. The information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
5. The structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
6. Principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
7. Business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
8. The practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
9. The prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.

## **Abilities**

**Note:** The technical and functional abilities listed below are based on general occupational qualifications for Epidemiologists commonly recognized by most employers. Typically, you will not be required to have all of the abilities listed to be a successful performer. Recruitment and selection standards for an individual state job must be based on the specific knowledge, skills, and abilities for that job as indicated in the job announcement and job description in the Employee Work Profile.

### **The Ability to:**

1. Communicate information and ideas in speaking so others will understand.
2. Combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
3. Listen to and understand information and ideas presented through spoken words and sentences.
4. Communicate information and ideas in writing so others will understand.
5. Tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

6. See details at close range (within a few feet of the observer).
7. Read and understand information and ideas presented in writing.
8. Arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
9. Come up with unusual or clever ideas about a given topic or situation, or to develop creative ways to solve a problem.

## Tasks

**Note:** The following is a list of sample tasks typically performed by Epidemiologists. Employees in this occupation will not necessarily perform all of the tasks listed.

1. Plans and directs studies to investigate human or animal disease, preventive methods, and treatments for disease.
2. Analyzes data, applying statistical techniques and scientific knowledge, prepares reports, and presents findings.
3. Investigates cause, progress, life cycle, or mode of transmission of diseases or parasites.
4. Studies effects of drugs, gases, pesticides, parasites, or micro-organisms, or health and physiological processes of animals and humans.
5. Conducts research to develop methodologies, instrumentation, or identification, diagnosing, and treatment procedures for medical application.
6. Plans methodological design of research study and arranges for data collection.
7. Examines organs, tissues, cell structures, or micro-organisms by systematic observation or using microscope.
8. Consults with and advises physicians, educators, researchers, and others regarding medical applications of sciences, such as physics, biology, and chemistry.
9. Prepares and analyzes samples for toxicity, bacteria, or microorganisms or to study cell structure and properties.
10. Confers with health department, industry personnel, physicians, and others to develop health safety standards and programs to improve public health

## INTERESTED?

Like people, occupations have traits or characteristics. These characteristics give important clues about the nature of the work and work environment, and give you an opportunity to match your own personal interests to a specific occupation. When you choose a job in an occupation that matches your own interests you have taken an important step in planning a successful and rewarding career. Epidemiology work is “Investigative, Realistic and Social”.

The work is **Investigative** because it frequently involves working with ideas, and requires an extensive amount of thinking. Epidemiology can involve searching for facts and figuring out problems mentally.

It is **Realistic** since it frequently involves work activities that include practical, hands-on problems and solutions. Realistic occupations deal with plants, animals, and real-world materials like wood, tools, and machinery.

The work is **Social** because it involves working with, communicating with, and teaching people. Epidemiology jobs often involve helping or providing service to others.

## **LICENSURE, REGISTRATION, OR CERTIFICATION REQUIREMENTS**

Generally this is not required for non-medical Epidemiology positions in state government. However, to improve career advancement opportunities, you should consider the advantages of specialty certification and include this step in your self-development plan.

## **EDUCATIONAL, TRAINING, AND LEARNING OPPORTUNITIES**

Non-medical epidemiology jobs typically require a masters or doctorate degree in life sciences, biostatistics, public health, or closely related field.

Sources of educational, training, and learning opportunities include:

Virginia Commonwealth University, Center for Life Sciences  
<http://www.vcu.edu/lifesci/>

University of Virginia  
<http://artsandsciences.virginia.edu/departments.html>

## **COMMONWEALTH COMPETENCIES**

Competencies are a set of identified behaviors, knowledge, skills, and abilities that directly and positively impact the success of employees and the organization. Competencies can be observed and measured. When consistently demonstrated, competencies make employees particularly effective in their work. Competencies help lay out a road map to career success. You can use the Commonwealth Competencies to help improve your individual performance by adopting behaviors that make high performing employees successful in their jobs. In this way, you can use the Commonwealth Competencies for your further professional development.

**The Commonwealth Competencies are:**

1. Technical and Functional Expertise
2. Understanding the Business
3. Achieving Results
4. Serving the Customer
5. Teamwork
6. Interpersonal and Communication Skills
7. Leadership and Personal Effectiveness

The above competencies may be applied to employees throughout the Commonwealth of Virginia. They can be rank-ordered by agencies and hiring managers to represent the needs of a specific job. The rank ordering will change depending upon the occupation, an organization's priorities, the actual job requirements, and the supervisor's preferences.

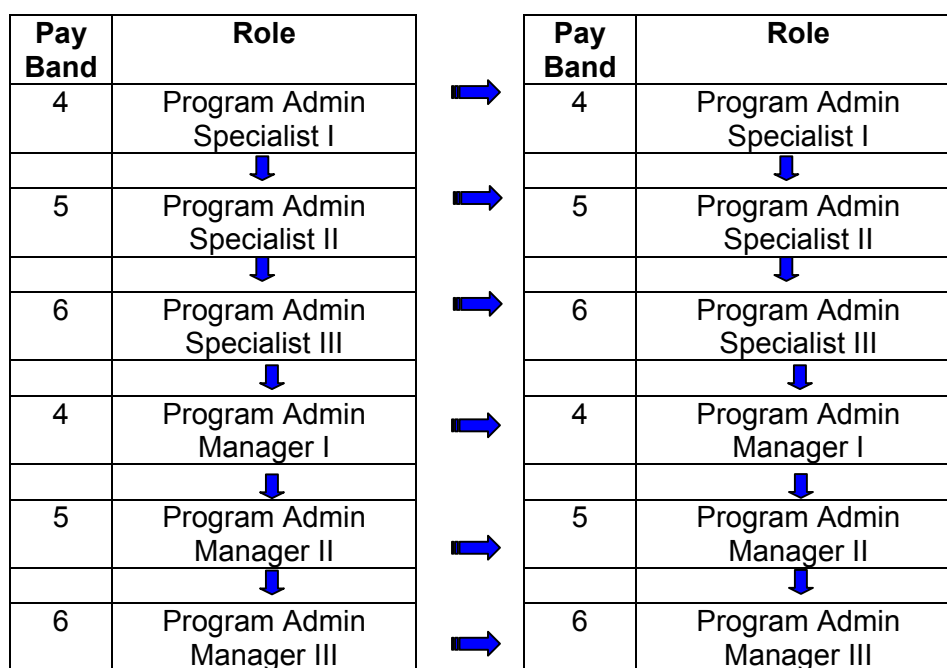
Career success is both about what you do (applying your technical knowledge, skills, and ability) and how you do it (the consistent behaviors you demonstrate and choose to use) while interacting and communicating with others. Hopefully, by studying the Commonwealth competencies, identifying your developmental opportunities, and working to refine your own competence, you can take charge of your career!

For additional information about the **Commonwealth Competencies** go to: [http://jobs.state.va.us/cc\\_planningctr.htm](http://jobs.state.va.us/cc_planningctr.htm). For the competencies, we first list the competencies and then define each. Finally, we list competency indicators; to describe what successful performance looks like.

## **COMMONWEALTH CAREER PATH**

Career opportunities in the Commonwealth are not limited to moving “up” to the next highest role and pay band, changing positions, or to becoming a supervisor. That’s because most roles describe a broad group of occupationally related positions that perform a range of work that requires increased knowledge and skills. For that reason, Commonwealth roles describe the career paths within the same or higher-level role for the same or different Career Group. The broad salary range and the Commonwealth’s pay practices provide flexibility in recognizing career development and advancement. ([Salary Structure](#))

For example:



### **Sample Career Path**

#### **Program Administration Specialist I**

The Program Administration Specialist I role provides a career track for program specialists who provide services in a program area that range from entry level professional to first-line supervisors. Employees’ responsibilities require a specialized knowledge of the program area and the laws, regulations, policies and procedures relevant to the program.

### **Program Administration Specialist II**

The Program Administration Specialist II role provides career tracks for program specialists who perform advanced-level responsibilities focusing on intermediate to long-range program issues affecting program activities and services development, planning, delivery, monitoring, and evaluation. Responsibilities may extend to local, state and federal organizations as well as private individuals in order to promote service delivery.

### **Program Administration Specialist III**

The Program Administration Specialist III role provides career tracks for program specialists who serve as a subject matter expert and authority in an assigned area of responsibility. Specialists in this role are assigned the agency's highest programmatic priorities. Responsibilities relate to the development, delivery, and support of statewide program activities and services.

### **Program Administration Manager I**

The Program Administration Manager I role provides a career track for first-level managers who perform day-to-day program administration and service delivery within organizational unit(s). Responsibilities include management of administrative, budgeting, operational and programmatic activities.

### **Program Administration Manager II**

The Program Administration Manager II role provides career tracks for managers who focus on immediate to long-range program issues affecting the management of a program. Typical responsibilities within this role include management of administrative, budgeting, planning, scheduling, operational, and programmatic activities.

### **Program Administration Manager III**

The Program Administration Manager III role provides career tracks for managers who oversee multiple program activities that are long-range in focus. Responsibilities include management of complex programs; identification of target population needs, monitoring programs, evaluation of overall program performance, implementation of policies and procedures, and supervision of all levels of program personnel.

**ADDITIONAL OCCUPATIONAL INFORMATION CAN BE FOUND AT:**

O\*NET (Occupational Information Network)  
[http://online.onetcenter.org/gen\\_search\\_page](http://online.onetcenter.org/gen_search_page)

Virginia Employment Commission  
<http://www.alex.vec.state.va.us/>

Career One Stop  
<http://www.careeronestop.org/>

Virginia Career Resource Network  
<http://www.vacrn.net/>

Certification Board of Infection Control and Epidemiology  
<http://www.cbic.org>